

### REMARKS

Claims 12-27 are canceled. Claims 28-30 are new. Claims 1-11, and 28-30 are presently pending. Claims 1, 6, and 8-11 have been amended herein.

No new matter has been added by the claim amendments and new claims added herein. For example, the amendments to claims 1 and 10 are supported by at least page 14, lines 4-8 of the specification as originally filed. New claim 30, and the amendments to claims 6 and 8, are supported by at least Table 1 on page 20 of the specification as originally filed. The amendment to claim 8 is also supported by at least page 33, lines 10-11, and claims 18 and 19 as originally filed. New claim 28, and the amendment to claim 11, are supported by at least page 10, lines 16-17 of the specification and claim 10 as originally filed. New claim 29 is supported by at least page 14, lines 4-8 of the specification as originally filed.

In the non-final Office Action mailed on 05/17/2007 the drawings were objected to under 37 CFR §1.83(a) as allegedly not showing an inventive feature required by claim 8 (specifically, a second metal plating applied over a first metal plating that has a columnar structure). The objection to the drawings has now been overcome because the inventive feature in question has been removed from claim 8, as amended herein.

In the non-final Office Action mailed on 05/17/2007 claim 1 was objected to for informalities at lines 5 and 6. The objection to claim 1 has now been overcome because all of the corrective amendments helpfully suggested by the examiner have been made to claim 1.

In the non-final Office Action mailed on 05/17/2007 claims 1-11 were rejected under 35 U.S.C. §112, second paragraph, as being allegedly indefinite. Those rejections have now been overcome because claim 1 has been amended to:

- (a) clarify that "having an outer surface" pertains to the base metal, and
- (b) to use the commonplace, ubiquitous, and unquestionably definite claim language "at least ... but no more than" to specify the thickness of the first metal plating, and

(c) to clarify that the protrusion material is “different from and harder than the base metal” rather than being a structural quality of the base metal.

The reference to “columnar structure” in claims 8 & 9 is not vague at least because (i) “columnar” has an ordinary meaning that is well understood by those skilled in the art, (ii) its physical structure is expressly shown in Fig. 5, (iii) its physical structure is expressly described at least on page 17, lines 15-18 of the specification, and (iv) its physical structure is enabled by at least the process description preceding and referenced by lines 3-4 of page 16 of the specification.

Also in the non-final Office Action mailed on 05/17/2007, claims 1-9, and 11 were rejected under 35 U.S.C. §103(a), as being allegedly obvious over US 6,754,044 to Braunheim et al (hereinafter “Braunheim”). Claims 1, and 7-8 have been amended herein. These claim rejections are hereby traversed.

Claim 1 expressly requires that the first metal plating is plated on the same surface from which the at least one surface protrusion protrudes. Support for the amendment of claim 1 can be found in the present patent application as originally filed at least in Fig. 4. At least because Braunheim does not teach or suggest this claim limitation, the rejection of claim 1 under 35 U.S.C. §103(a) should be withdrawn.

Specifically, Braunheim teaches two types of metal platings:

(1) soft metal plating for the purpose of masking regions where no carbide or nitride protrusions are desired (*see* Braunheim col. 13, line 66 to col. 14, line 3; *see also* Braunheim col. 16, lines 19-23), and

(2) hard metal plating as an alternative method of surface hardening unrelated to protrusions (*see* Braunheim col. 17, line 26-27).

Neither of these platings or purposes would suggest to one of ordinary skill in the art to plate the same surface from which the at least one surface protrusion protrudes (as required by pending claim 1 as amended). Quite the contrary, Braunheim's plating of the first type intentionally prevents the creation of surface protrusions, and Braunheim's plating of the second type is an alternative method of surface hardening totally unrelated to surface protrusions. Accordingly, motivation to modify the Braunheim reference is absent and thus Braunheim can not support a proper *prima facie* case of obviousness of

claim 1. Applicants therefore request that the rejection of claims 1-9 and 11 under 35 U.S.C. §103(a) be withdrawn.

Furthermore, neither of Braunheim's two plating types suggests a thickness range to secure or cover surface protrusions since no such purpose was ever contemplated in Braunheim. Indeed, improper "hindsight" based on the present application would be required to provide any motivation to modify Braunheim to accomplish such a purpose (securing or covering protrusions) that was never contemplated in Braunheim, via a thickness range that also was never disclosed in Braunheim (i.e. two-fifths to twice the protrusion height, as required by pending claim 1). For this additional reason, Braunheim cannot support a proper prima facie case of obviousness of claim 1. Applicants therefore request that the rejection of claims 1-9 and 11 under 35 U.S.C. §103(a) be withdrawn.

The thickness ranges of claims 1, 5, 6, 10, and 30 would not have resulted through the course of routine engineering experimental optimization of Braunheim's teachings, because the hypothetical purpose of such experimental optimization (securing or covering protrusions) was never contemplated in Braunheim. On the contrary, routine experimentation based on Braunheim's teachings would have led to a different range optimized to accomplish one of Braunheim's purposes (e.g. masking regions where no carbide or nitride protrusions are desired). For this additional reason, the rejection of claims 1, 5, and 6 under 35 U.S.C. §103(a) should be withdrawn.

Claim 4 is further distinguished from Braunheim because claim 4 additionally requires a second metal plating applied over the first metal plating. There is absolutely no teaching or suggestion in Braunheim to apply a second metal plating applied over the first metal plating. Providing a second metal plating is expensive and therefore would not "have resulted through routine engineering optimization and experimentation" absent the teachings of the present patent application to provide a specific motivation. For example, neither of the aforementioned two types of metal platings that Braunheim discloses requires or would apparently benefit from a second plating layer. Specifically, (1) Braunheim's plated masking layer can serve to mask regions where no protrusions are desired without the need for any second plating layer, and (2) the importance of the hardness of Braunheim's hard surface plating would be diminished by any addition of a

second plating layer. Thus, one of ordinary skill would not be motivated to modify the Braunheim teachings to add a second plating layer, and for this additional reason Braunheim can not support a proper prima facie case of obviousness of claim 4. Applicants request that the rejection of claim 4 under 35 U.S.C. §103(a) be withdrawn for this additional reason.

Claim 7 is further distinguished from Braunheim because it additionally requires that the first metal plating have a columnar structure. There is absolutely no teaching or suggestion in Braunheim that the first metal plating have a columnar structure. Moreover, no motivation is provided in the Braunheim reference to modify Braunheim's teachings to include a columnar structure. For this additional reason, Braunheim can not support a proper prima facie case of obviousness of claim 7 and Applicants request that the rejection of claim 7 under 35 U.S.C. §103(a) be withdrawn for this additional reason.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the pending claims are now in condition for allowance and requests reconsideration of the rejections. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to contact the undersigned attorney at the number listed below.

The Commissioner is hereby authorized to charge payment of any required fees associated with this Communication or credit any overpayment to Deposit Account No. 50-4119.

Respectfully submitted,



By: \_\_\_\_\_

Joshua C. Harrison, Ph.D., Esq.  
Reg. No. 45,686

Date: 16 August 2007

BARCELÓ & HARRISON, LLP  
2901 W. Coast Highway, Suite 200  
Newport Beach, CA 92663  
Tel.: (949) 340-9736  
Fax: (949) 258-5752